

Issue Paper

Illinois Rivers Decision Support System (<http://ilrdss.sws.uiuc.edu>)

The Illinois Rivers Decision Support System (ILRDSS) is being developed to provide scientific support and access to high-quality information for restoration of the Illinois River and its watershed. Once fully developed, the ILRDSS will enable decision-makers to assess and evaluate the effectiveness of different restoration projects and the consequences of other natural or human-induced changes in the watershed. The ILRDSS also will improve dissemination of scientific tools and information by using the Internet as the primary access to inventories of current and historical projects, data, simulations, and involved agencies/participants within the Illinois River watershed. The ILRDSS website provides this information to a larger audience at a lower cost, in a more usable form, and much more quickly than previous outreach methods.

This network and communication framework includes information resources, modular databases, and simulation models to evaluate the impact of water resources development, land-use changes, economic development, and climate variability on sedimentation, water quality, ecology, hydrology, and hydraulics in terms of long-term restoration and sustainability of the Illinois River.

To date the research team has created a website (<http://ilrdss.sws.uiuc.edu>) that is dynamically generated from a database currently containing more than 1,000 links to data, information, and graphical resources related to the Illinois River and its watershed. The team can update the ILRDSS site quickly and efficiently through new database entries. Database access also provides website users with increased search capabilities, which are vital to locating the volume of data and information envisioned for inclusion in the ILRDSS website.

Illinois State Water Survey (ISWS) scientists have developed for the first time a hydrologic model for the entire Illinois River Basin. This model in conjunction with a one-dimensional unsteady flow hydraulic model for the mainstem of the Illinois River will be used to evaluate the impacts of climate and land-use changes on the water resources of the Illinois River Basin. The ILRDSS uses the Geographic Information System (GIS) as one of the major tools to distribute data and information to assist planners and decision makers in organizing and evaluating information. The ILRDSS has the capabilities that enables users to access locally managed GIS data from the ILRDSS web server, off-site GIS data from different sources, pre-made GIS maps, and to generate their own GIS maps using ArcGIS.

Another important product featured at ILRDSS web site is a collection of animations produced at the ISWS using three-dimensional terrain visualizations, rendering animation software. These animations illustrate vividly historical changes (for selected segments) along the Illinois River and Peoria Lake. These products have been very effective in communicating and illustrating changes that have taken place in the past along the Illinois River and to visualize potential changes in the future under different management scenarios. All the animations can be viewed or downloaded at the ILRDSS website.

Future activities include: Continued design, development, and maintenance of the website including expanding access to databases, GIS data sets and agency/organization information, creating additional web mapping, decision-making applications, and scanning of past publications. The Illinois National History Survey will organize and serve fisheries and macro invertebrates data from INHS, IDNR, and IEPA through the ILRDSS web site expanding the availability of biological data through the ILRDSS. ISWS will develop an interactive hydrologic model where users can see the impacts of changing land use practices and climate variability on the hydrology of the Illinois River Basin. The GIS and animation tools and products will continue to be expanded.

The outreach and educational efforts will be a continuous process by giving briefings and presentations at meetings, workshops and conferences demonstrating the capabilities of ILRDSS. Interactions with watershed and ecosystem partnerships, DNR regional and field offices, governmental entities, and educational organizations will be expanded.

All the Scientific Surveys are seeking additional funding for data collection and analyses relevant to the Illinois Rivers. When some of these projects are funded they will generate valuable data and information which will be made available through the ILRDSS.

An advisory panel consisting of representatives from the SAC/IRCC and state agencies to advise staff on future developments of the ILRDSS will also be formed. Please note that the SAC has previously supported the concept of full funding of the ILRDSS.

Budget

Annual budget for maintaining, updating, and improving the ILRDSS will be \$295,000. This funding will support core staff at ISWS and provide funding for the other Scientific Surveys to generate additional data and information.